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**From:** MacNicholl, Peter@DTSC [Peter.MacNicholl@dtsc.ca.gov]  
**Sent:** 3/19/2018 5:07:39 PM  
**To:** Fennessy, Christopher (christopher.fennessy@Rocket.com) (christopher.fennessy@Rocket.com) [christopher.fennessy@Rocket.com]  
**CC:** Keller, Lynn [Keller.Lynn@epa.gov]; MacDonald, Alex@Waterboards [Alex.MacDonald@waterboards.ca.gov]  
**Subject:** FW: Aerojet A40 FS Cost Estimate review by ESPO

Hi Chris,

These below comments are from DTSC's ESU Unit. These items should be addressed with responses from AR. These additional comments on the cost estimates will be included in DTSC's FS comments/concurrence letter. These comments from ESU were due prior to my vacation but didn't receive till after I left so I apologize for the late submittal.

Sincerely,

-Pete

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**From:** Myers, Perry@DTSC  
**Sent:** Tuesday, March 06, 2018 11:30 AM  
**To:** MacNicholl, Peter@DTSC <Peter.MacNicholl@dtsc.ca.gov>  
**Subject:** Aerojet A40 FS Cost Estimate review by ESPO

Hi Pete,

I completed the review of the cost estimates included in the November 2017 version of the Feasibility Study for Area 40 of the Aerojet site as requested.

I found some issues related to the volumes of soil excavated vs. that backfilled or disposed of that have the potential to underestimate costs by 30% or more, specifically:

- Scenario "A" – Soil Excavation and Disposal Perchlorate Sources to Groundwater includes;
  - Excavation of 33,106 tons
  - Backfill of 20,496 tons
  - Disposal of 20,496 tons

The total tonnage of soils designated as "perchlorate" in table 4-2 sums to 30,900 tons. Adding a 10% factor for uncertainty would be close to the value of 33,106 tons used for the excavated volume. If the amount of perchlorate contaminated soil that will be excavated and disposed of should be 33,106 then this section of the cost estimate is low by approximately +40% due to underestimating the costs for disposal of contaminated soil, clean backfill, and transportation of each of these.

- Scenario "B" – Soil Excavation and Disposal Perchlorate Sources to Groundwater includes;
  - Excavating and backfilling 33,106 tons of soil
  - Treating 14,640 bcy of contaminated soil in an onsite biocell at an all-inclusive cost of \$199.18/bcy

This is similar to the issue with Scenario "A", the volume of contaminated soil excavated is over two times that sent for treatment, which has to the potential to underestimate the costs for this scenario by over 30%.

- RO 8b and c) North – Soil Excavation and Disposal (37B-S-RA1). In RO 8b the volume of contaminated soil for disposal and backfilling matches what is listed in Table 4-2 but the volume to be excavated is 2.4X and 8c is similar with the excavated volume 1.6X, which has

the potential to overestimate the cost of these ROs. While this is not an issue of great concern it is part of the soil volume discrepancy trend.

It would be a good to ask for clarification on why the excavated volumes differ from the backfill volumes and the disposal volumes before making formal deficiency comments on the cost estimates.

Perry Myers, P.E.  
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